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3rd International Training Course on Illicit Trafficking and Radiological Consequences

IHK Karlsruhe, Germany
11-13 May 2011

I have been working as a research assistant in Nuclear Technology Department.

Nuclear Technology Department's studying subjects are:

- obtaining uranium and thorium from mines and different sources, concentrating and purifying them;
- preparing several nuclear fuel complexes and characterization studies;
- concentration of some radioactive elements by using natural and synthetic adsorbents and synthesizing new adsorbents, examining their usage for handling radioactive wastes;
- determining natural radionuclides in some environmental samples by using various methods, separating and assigning rare soil elements by using several chromatographic methods.

My study area of specializations;

- Nuclear chemistry,
- Radioanalytical chemistry,
- Environmental radioactivity,
- Separation techniques,
- Solvent extraction,
- Adsorption
- Nanomaterials.

In my master thesis, I studied “*Investigation of adsorption performance of Pb(II) and Cd(II) ions on olive cake*”.

In my PhD thesis, I studied “*Synthesis of nanocrystal adsorbents and using these adsorbents for removal of uranium from aqueous solutions*”.

I worked as a post-doctorate researcher at Universiti Teknologi Malaysia for 1 year. There, I *synthesized Selenium-Mesoporous Material Composites and I used it in the Development of a Glucose Biosensor.*

My main subjects are **synthesis of inorganic ,organic and nano adsorbents for removal of radionuclides such as U(VI), Th(IV), Sr(II) etc..** For this aim I have been studying on sorption of radionuclides and determine the kinetic and equilibrium data for sorption.

My the other subject is investigation of **environmental radioactivity**. In this sense I and my research group investigate the natural activity concentration for river or lake waters, sediment or biological samples. Beside this

- To measure surface gamma and dose rate in the field,
- To determine the activity concentration of natural radionuclide for sediment or soils samples for gamma spectroscopy,
- To calculate equivalent ^{238}U , ^{232}Th and ^{40}K and converting these data to absorbed dose rate,
- To determine the gross alpha and gross beta activity in soil, sediments and water samples , total radium isotopes in water , etc.

Publications

- ✓ **Sabriye Yusan**, Nilgun Yenil, Selda Kuzu, and Mahmoud A. A. Aslani, “Properties of Uranium(VI) Adsorption by Methyl 3-O-Acetyl-5,6-dideoxy-(S)-1,2-trichloroethylidene-r-D-xylo-hept-5(E)-eno-1,4-furano-uronate”, J. Chem. Eng. Data, In press.
- ✓ **Sabriye Yusan**, Sema Erenturk, “Adsorption Characterization of Strontium on PAN/Zeolite Composite Adsorbent”, World Journal of Nuclear Science and Technology, 1, (2011) 6-12.
- ✓ **Sabriye (Doyurum) Yusan**, Sema (Akyil) Erenturk, “Sorption behaviors of uranium (VI) ions on α -FeOOH”, Desalination, 269(1-3) (2011) 58-66.
- ✓ **Sabriye Yusan**, Sema Akyil Erenturk , “Adsorption equilibrium and kinetics of U(VI) on beta type of akaganeite”, Desalination, 263 (1-3) (2010) 233-239.
- ✓ **S. Yusan**, M. A. A. Aslani, D. A. Turkozu, H. A. Aycan, S. Aytas, S. Akyil, “Adsorption and thermodynamic behaviour of U(VI) on the Tendurek volcanic tuff”, Journal of Radioanalytical and Nuclear Chemistry, 283/1 (2010) 231-238.
- ✓ S. Akyil, S. Aytas, D. A. Turkozu, M.A. A. Aslani, **S. (Doyurum) Yusan**, M. Eral, “Radioactivity levels in surface water of lakes around Izmir/Turkey”, Radiation Measurements, 44 (2009) 390–395.
- ✓ **S. (Doyurum) Yusan**, S. Akyil, “Sorption of Uranium(VI) from aqueous solutions by akaganeite”, Journal of Hazardous Materials, 160 (2008) 388–395.
- ✓ **S. Doyurum**, A. Celik, “Pb(II) and Cd(II) “Removal from aqueous solutions by olive cake” Journal of Hazardous Materials, 138/1(2006)22-28.

PROJECTS :

1. Mahmoud A. A. Aslani, Neslihan Akkuş, Emine Nostar, Berkan Çetinkaya, **Sabriye Yuşan**, Süleyman İnan, Şenol Sert, Berkay Camgöz, Ceren Kütahyalı, “*Radiometric Determination of Uranium Levels in the Leaching Residues of Uranium ore by Using Gamma Spectroscopy Technique*”, Project Foundation of Ege University, Project No: 11NBE004, 2011-2013.
2. Mahmoud A. A. Aslani, **Sabriye Yuşan**, Cem Gök, Sema Akyıl, Şule Aytaş, “*Study of sorption Behaviour of Cs-137 and Sr-90 on Polymeric Modified Resorcinol Resin By Using Chemometric Techniques*”, Scientific Research Project Foundation of Ege University, Project No: 09NBE013, 2009-2011.
3. S. Akyıl, **S. Yusan**, Z. Camtakan, “*Synthesis and investigation of nanocrystal adsorbents for sorption of U(VI) ions from aqueous solutions*”, Scientific Research Project Foundation of Ege University, Project No: 08NBE013, May 2008-May 2010.
4. S. Aytaş, S. Akyıl, M.A.A. Aslani, T. Karalı, C. Gök, **S. Doyurum**, M. Gökçe, D.A. Turkozu, A. D. M. Gelev, I. Sivriev, D. Dimitrova, L. Bogoeva, N. Lihareva, P. Trifonova, I. Penev, N. Nikolova, “*Radiological and Chemical Monitoring of The Rivers Common for Turkey and Bulgaria*”, The Scientific and Technological Research Council of Turkey (TUBITAK) - Bulgarian Academy of Sciences (BAS) Corporation Program, Project No: 106Y201, June 2007-June 2010.
5. M. A. A. Aslani, **S. Doyurum**, C. Gök, S. Akyıl, S. Aytaş, “*Synthesis, characterization and investigation of some organometallic adsorbents for sorption of uranium ions*”, Scientific Research Project Foundation of Ege University, Project No: 06 NBE 007, May 2006-May 2008.
6. S. Akyıl, S. Aytaş, M.A. A. Aslani, A. Kilincarslan, D. A. Turkozu, M. Eral, **S. Doyurum**, “*Investigation of Gross Alpha and Gross Beta Activities in Surface Water of Lakes in Izmir*”, Ege University, Research Foundation Project, Project No: 2004 NBE 005.
7. D.A. Turkozu, H. A. Aycan, S. Akyıl, M. A. Isik, M. A. A. Aslani, S. Aytaş, U. Tolluoğlu, M. Eral, M.K. Olgen, **S. Doyurum**, “*Evaluation of Risk of Radiologic and Hydrogeochemical in Van Lake*”, TÜBİTAK, ÇAYDAG Project, Project No: 104Y072.



THANK YOU